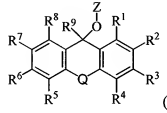
Listing of claims

1. (Currently amended) A compound of formula [[I]](I):



(I),

wherein:

R^1, R^3, R^4, R^5, R^6 and R^8 are each, independently, H, [[or]] alkyl or substituted alkyl;

R^2 and R^7 are each, independently, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, hydroxyl, chloro, ~~floro,~~ fluoro, iodo, cyano, azido, nitro, -C(=O)O-R^{10}, -O-C(=O)-R^{10}, -C(=O)N(R^{10})R^{11}, -N(R^{10})C(=O)R^{11}, -N(R^{10})R^{11}, -O-R^{10}[[,]] or -S-R^{10};

~~or two or more groups R^1-R^8, together with the ring carbons to which they are attached, combine to form a cyclic moiety selected from substituted or unsubstituted alicyclic, substituted or unsubstituted heterocyclic, substituted or unsubstituted aromatic, or substituted or unsubstituted heteroaromatic;~~

R^9 is alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl or substituted aryl;

R^{10} is H or alkyl;

R^{11} is H or alkyl;

Z is a deoxy residue of a protected compound selected from a nucleoside, a nucleotide, a solid support-bound nucleotide, a nucleotide phosphoroamidite, an oligonucleotide, an oligonucleotide blockmer[[,]] or a solid support-bound oligonucleotide; and

Q is O[[,]] or S~~, NR^{10}, $N(C=O)R^{10}$~~.

2. (Currently amended) ~~A~~ The compound of claim 1, wherein R^1, R^3, R^4, R^5, R^6 and R^8 are each H.

3. (Currently amended) ~~A~~ The compound of claim 2, wherein R^2 and R^7 are ~~selected from~~ each, independently, alkyl or substituted alkyl.

4. (Currently amended) ~~A~~ The compound of claim 1, wherein ~~any one of~~ the protected ~~compounds~~ compound comprises at least one modified sugar, a 2'-substituent [[,]] or a conjugate group.

5. (Currently amended) ~~A~~ The compound of claim 4, wherein the 2'-substituent is selected from fluoro, alkoxy, substituted alkoxyl[[,]] or OPR, wherein PR is a ~~2'-protecting~~ 2'-hydroxyl protecting group.

6. (Currently amended) ~~A~~ The compound of claim 5, wherein the 2'-substituent is selected from fluoro, OCH_3, $OCH_2CH_2OCH_3$[[,]] or $OCH_2CH_2ON(CH_3)_2$.

7. (Currently amended) ~~A~~ The compound of claim 5, wherein the 2'-substitutent is OPR.

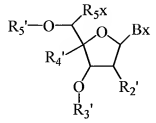
8. (Currently amended) ~~A~~ The compound of claim 7, wherein PR is selected from CPEP, ACE, TOM, TBDMS[[,]] or Fpmp.

9. (Currently amended) ~~A~~ The compound of claim 4, wherein the modified sugar is a locked nucleic acid[[,]] or a 4'-thio nucleic acid.

10. (Currently amended) ~~A~~ The compound of claim 4, wherein the protected compound comprises a conjugate group wherein the conjugate group comprises a lipophilic moiety.

11. (Currently amended) ~~A~~ The compound of claim 10, wherein the lipophilic moiety is selected from a cholesterol moiety or a polyethylene glycol moiety.

12. (Currently amended) A compound of formula (II):

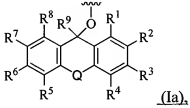


(II),

wherein:

Bx is an optionally protected heterocyclic base moiety;

one of R_3' [[or]]and R_5' is Px, wherein Px is a hydroxyl protecting group [[of]]having formula ~~I, according to claim 1,~~ (Ia):



(Ia),

wherein:

R^1, R^3, R^4, R^5, R^6 and R^8 are each, independently, H, alkyl or substituted alkyl;

R^2 and R^7 are each, independently, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, hydroxyl, chloro, fluoro, iodo, cyano, azido, nitro, -C(=O)O-R^{10}, -O-C(=O)-R^{10}, -C(=O)N(R^{10})R^{11}, -N(R^{10})C(=O)R^{11}, -N(R^{10})R^{11}, -O-R^{10} or -S-R^{10};

R^9 is alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl or substituted aryl;

R^{10} is H or alkyl;

R^{11} is H or alkyl; and

Q is O or S; and

the other of R_3' and R_5' is selected from:

-P(Pg)(Pn), where Pg is a phosphorus protecting group and Pn is -N(RN1)(RN2), wherein each of RN1 and RN2 is independently selected from hydrogen, substituted or unsubstituted aliphatic, substituted or unsubstituted alicyclic, substituted or unsubstituted aromatic, or substituted or unsubstituted heteroaromatic, or RN1 and RN2 are taken

together with the nitrogen atom to which they are attached to form a cyclic moiety selected from substituted or unsubstituted heterocyclic;

-L-ss, where L is a linking moiety and ss is a solid support;

an H-phosphonate moiety;

or a nucleic acid moiety selected from a nucleoside, a nucleotide, a solid support-bound nucleotide, a nucleotide phosphoroamidite, an oligonucleotide, an oligonucleotide blockmer[[,]] or a solid support-bound oligonucleotide;

R_2' is ~~independently selected from~~ OH, alkoxy, substituted alkoxy, halogen[[,]] or OPR, where PR is a ~~2'-protecting~~ 2'-hydroxyl protecting group, or R_2' is a nucleic acid moiety selected from a nucleoside, a nucleotide, a solid support-bound nucleotide, a nucleotide phosphoroamidite, an oligonucleotide, an oligonucleotide blockmer[[,]] or a solid support-bound oligonucleotide;

R_4' is H or R_4' and R_2' are taken together to be -$(CH_2)_n$-Y-, where n is 1 or 2 and Y is selected from -O-, -S-[[,]] or -N(RN3)-, wherein RN3 is selected from H or substituted or unsubstituted aliphatic; and

[[R_5']] R_{5x} is selected from H or substituted or unsubstituted alkyl.

13. (Currently amended) ~~A~~ The compound of claim 12, wherein R_5' is Px and R_3' is -P(Pg)(Pn).

14. (Currently amended) ~~A~~ The compound of claim 13, wherein Pg is -$O(CH_2)_2CN$ and Pn is -$N(CH(CH_3)_2)_2$.

15. (Currently amended) ~~A~~ The compound of claim 12, wherein R_2' is OPR.

16. (Currently amended) ~~A~~ The compound of claim 15, wherein PR is selected from Px, CPEP, ACE, TOM, TBDMS[[,]] or Fpmp.

17. (Currently amended) ~~A~~ The compound of claim 13, wherein Pn is -$N(CH_2CH_3)_2$.

18. (Currently amended) ~~A~~ The compound of claim 17, wherein R_2' is OPR.

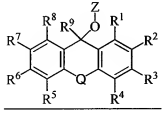
19. (Currently amended) ~~A~~ The compound of claim 18, wherein PR is CPEP.

20. (Currently amended) ~~A~~ The compound of claim 12, wherein R_5' is Px and R_3' is a nucleic acid moiety selected from a nucleoside, a nucleotide, a solid support-bound nucleotide, a nucleotide phosphoroamidite, an oligonucleotide, an oligonucleotide blockmer[[,]] or a solid support-bound oligonucleotide.

21. (Currently amended) ~~A~~ The compound of claim 12, wherein R_3' is Px and R_5' is a nucleic acid moiety selected from a nucleoside, a nucleotide, a solid support-bound nucleotide, a nucleotide phosphoroamidite, an oligonucleotide, an oligonucleotide blockmer[[,]] or a solid support-bound oligonucleotide.

22. (Currently amended) ~~A~~ The compound of any one of claims 20 or 21, wherein ~~any one of~~ said nucleic acid ~~moieties~~ moiety comprises [[a]] one or more modified ~~sugar~~ sugars, ~~a 2'-substituent,~~ one or more 2'-substituted sugars or a conjugate group.

23. (Currently amended) A method of synthesizing ~~compounds~~ a compound of formula [[I,]](I):

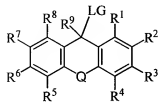


(I),

~~according to claim 1,~~ comprising the steps of:

providing a ~~free hydroxyl of a~~ compound having a free hydroxyl group, said compound selected from a nucleoside, a nucleotide, a nucleotide phosphoramidite, an oligonucleotide, an oligonucleotide blockmer or a solid support-bound oligonucleotide; and

reacting said free hydroxyl group ~~compound~~ with a protecting group of formula (III):



(III),

wherein:

R^1, R^3, R^4, R^5, R^6 and R^8 are each, independently, H, [[or]] alkyl or substituted alkyl;

R^2 and R^7 are each, independently, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, hydroxyl, chloro, ~~floro,~~ fluoro, iodo, cyano, azido, nitro, -C(=O)O-R^{10}, -O-C(=O)-R^{10}, -C(=O)N(R^{10})R^{11}, -N-(R^{10})C(=O)R^{11}, -N(R^{10})R^{11}, -O-R^{10}[[,]] or -S-R^{10};

~~or two or more groups R^1-R^8, together with the ring carbons to which they are bonded, combine to form a cyclic moiety selected from substituted or unsubstituted alicyclic, substituted or unsubstituted heterocyclic, substituted or unsubstituted aromatic, or substituted or unsubstituted heteroaromatic;~~

R^9 is alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl or substituted aryl;

R^{10} is H or alkyl;

R^{11} is H or alkyl;

LG is a leaving group; [[and]]

Q is O[[,]] or S~~, NR^{10}, N(C=O)R^{10}~~.; and

Z is a deoxy residue of a protected compound selected from a nucleoside, a nucleotide, a solid support-bound nucleotide, a nucleotide phosphoroamidite, an oligonucleotide, an oligonucleotide blockmer or a solid support-bound oligonucleotide.

24. (Original) The method of claim 23, wherein the leaving group is chloro.

25. (Original) The method of claim 23, wherein R^1, R^3, R^4, R^5, R^6 and R^8 are each H.